

#3

SEQUENCE LISTING

<110> Stiles, Michael E. Verderas, John C. Van Belkum,  
Marius J. Worobo, Randy W. Worobo, Rodney J.  
McCormick, John K. McMullen, Lynn M. Leisner, Jorgen J.  
Poon, Alison Franz, Charles MAP <120> Novel Bacteriocins,  
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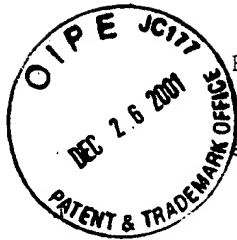
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Ser Thr Leu Phe Leu Ile Ser Leu Ile Ala Ile Pro Ala Tyr Ala Leu  
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Val Val Trp Leu Phe Met Arg Pro Phe Ser Lys Met Asn Asn Asp Gln  
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Asn Lys Ile Ser Val Gly Gln Leu Ile Thr Tyr Asn Ala Leu Leu Gly  
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570

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gggttgaaca tgctggcagc tcgttaattg cgttgtatga gggaattaaa ccctctcaat 2460  
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aagcgatttt aagaactgaa gtttattctt tagaaaaaaaa attaaacgaa aaaataaatg 2580  
ctcaaatacag aattgcgcaa aaaaataaaa aagaaattgc ggtaattgat ttcacaaaac 2640  
aaaaagaaaa actcaaaaaga gaattactta gttttgaaaa tgataaagaa atgaaactta 2700  
tggattcgca attaaaacaa tttcatgaaa ataaaacggt agctgatatt aatgatcagt 2760  
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aattaatttg ttgaaaaat tatattcgcc tttgcaaaaa ttattttcta aagaatatat 2880  
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ttaattatcg aaatgaacga caactttgga ttacaaaaa tggttttttt aaatagcaag 3420  
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<210> 16 <211> 227 <212> DNA <213> Divergicin structural gene;  
<220> <221> CDS <222> (1)..(225) <223>

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1 5 10 15  
  
ggg gca aca ttt ttc tca aca cca caa caa gct tct gct gct gca ccg 96  
Gly Ala Thr Phe Phe Ser Thr Pro Gln Gln Ala Ser Ala Ala Ala Pro  
20 25 30  
  
aaa att act caa aaa caa aaa aat tgt gtt aat gga caa tta ggt gga 144  
Lys Ile Thr Gln Lys Gln Lys Asn Cys Val Asn Gly Gln Leu Gly Gly  
35 40 45  
  
atg ctt gct gga gct ttg ggt gga cct ggc gga gtt gtg tta ggt ggt 192  
Met Leu Ala Gly Ala Leu Gly Gly Pro Gly Gly Val Val Leu Gly Gly  
50 55 60  
  
ata ggt ggt gca ata gca gga ggt tgt ttt aat ta 227  
Ile Gly Gly Ala Ile Ala Gly Gly Cys Phe Asn  
65 70 75

<210> 17 <211> 75 <212> PRT <213> Divergicin structural gene; <400>  
17

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1 5 10 15  
  
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20 25 30  
  
Lys Ile Thr Gln Lys Gln Lys Asn Cys Val Asn Gly Gln Leu Gly Gly  
35 40 45  
  
Met Leu Ala Gly Ala Leu Gly Gly Pro Gly Gly Val Val Leu Gly Gly  
50 55 60  
  
Ile Gly Gly Ala Ile Ala Gly Gly Cys Phe Asn  
65 70 75

<210> 18 <211> 75 <212> PRT <213> Divergicin structural gene <400>  
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20 25 30  
  
Lys Ile Thr Gln Lys Gln Lys Asn Cys Val Asn Gly Gln Leu Gly Gly  
35 40 45

Met Leu Ala Gly Ala Leu Gly Gly Pro Gly Gly Val Val Leu Gly Gly  
 50 55 60

Ile Gly Gly Ala Ile Ala Gly Gly Cys Phe Asn  
 65 70 75

<210> 19 <211> 170 <212> DNA <213> divergicin immunity gene; <220>  
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<400> 19  
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 1 5 10 15  
 ata att gtt ctt ctt gta ttt ttt tat aga agt tct ggt ttt tct tta 96  
 Ile Ile Val Leu Leu Val Phe Phe Tyr Arg Ser Ser Gly Phe Ser Leu  
 20 25 30  
 aaa aat tta gtt tta gga agt tta ttt tat ttg ata gca att ggt ctt 144  
 Lys Asn Leu Val Leu Gly Ser Leu Phe Tyr Leu Ile Ala Ile Gly Leu  
 35 40 45  
 ttt aat tat aaa aag ata aac aaa ta 170  
 Phe Asn Tyr Lys Lys Ile Asn Lys  
 50 55

<210> 20 <211> 56 <212> PRT <213> divergicin immunity gene; <400>  
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Met Lys Ile Lys Trp Tyr Trp Glu Ser Leu Ile Glu Thr Leu Ile Phe  
 1 5 10 15

Ile Ile Val Leu Leu Val Phe Phe Tyr Arg Ser Ser Gly Phe Ser Leu  
 20 25 30

Lys Asn Leu Val Leu Gly Ser Leu Phe Tyr Leu Ile Ala Ile Gly Leu  
 35 40 45

Phe Asn Tyr Lys Lys Ile Asn Lys  
 50 55

<210> 21 <211> 56 <212> PRT <213> Divergicin immunity gene <400>  
 21

Met Lys Ile Lys Trp Tyr Trp Glu Ser Leu Ile Glu Thr Leu Ile Phe  
 1 5 10 15

Ile Ile Val Leu Leu Val Phe Phe Tyr Arg Ser Ser Gly Phe Ser Leu  
 20 25 30

Lys Asn Leu Val Leu Gly Ser Leu Phe Tyr Leu Ile Ala Ile Gly Leu  
 35 40 45

Phe Asn Tyr Lys Lys Ile Asn Lys  
50 55

<210> 22 <211> 124 <212> DNA <213> Divergicin signal peptide; <220>  
<221> sig\_peptide <222> (1)..(123) <223>

<220> <221> CDS <222> (1)..(123) <223>

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1 5 10 15  
aat ttt aaa agg gtt ggt tat agt tgt ttg ttt atc tgg ggc aac att 96  
Asn Phe Lys Arg Val Gly Tyr Ser Cys Leu Phe Ile Trp Gly Asn Ile  
20 25 30  
ttt ctc aac acc aca aca agc ttc tgc t 124  
Phe Leu Asn Thr Thr Thr Ser Phe Cys  
35 40

<210> 23 <211> 41 <212> PRT <213> Divergicin signal peptide; <400>  
23

Ile Leu Val Ser Gln Thr Asn Leu Glu Val Gly Ile Tyr Glu Lys Thr  
1 5 10 15

Asn Phe Lys Arg Val Gly Tyr Ser Cys Leu Phe Ile Trp Gly Asn Ile  
20 25 30

Phe Leu Asn Thr Thr Thr Ser Phe Cys  
35 40

<210> 24 <211> 41 <212> PRT <213> Divergicin signal sequence <400>  
24

Ile Leu Val Ser Gln Thr Asn Leu Glu Val Gly Ile Tyr Glu Lys Thr  
1 5 10 15

Asn Phe Lys Arg Val Gly Tyr Ser Cys Leu Phe Ile Trp Gly Asn Ile  
20 25 30

Phe Leu Asn Thr Thr Thr Ser Phe Cys  
35 40

<210> 25 <211> 675 <212> DNA <213> Brochocin-C; <400> 25  
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gttacaacag atcgtgggag gttacagttc aaaagattgt ctaaaagata ttggtaaagg 180

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aattggtgct ggtacagtag ctggggcagc cggcggtggc ctagctgcag gattaggtgc 240
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tggtggatta ttaggtaact aggaggttat atttatgaaa aaagaactat tgaataaaaa 360
tgaaatgagt agaattatcg gcggcaaaat aaattgggga aatggtggcg gttcttgtgt 420
tgagaggtgca gtaattggag gcgccctcgg tggactaggt ggagctggcg gaggttgcac 480
tacaggagct atcggaagta tttgggatca atggtaaaaa ctatactatt ttcggttgta 540
atttcattcg ttgcattatg taacttttta ataaaaaaag atgtgtcttc aaaaaaaaaa 600
ttatttttta caggttctat tgctgtcttt ctaattatct atgattttct atggattata 660
ttctctaact agtac 675

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<210> 26 <211> 233 <212> DNA <213> Brochocin-C peptide A; <220>  
 <221> CDS <222> (1)..(231) <223>

<220> <221> sig\_peptide <222> (1)..(54) <223>

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1 5 10 15

gga ggt tac agt tca aaa gat tgt cta aaa gat att ggt aaa gga att 96
Gly Gly Tyr Ser Ser Lys Asp Cys Leu Lys Asp Ile Gly Lys Gly Ile
20 25 30

ggt gct ggt aca gta gct ggg gca gcc ggc ggt ggc cta gct gca gga 144
Gly Ala Gly Thr Val Ala Gly Ala Ala Gly Gly Gly Leu Ala Ala Gly
35 40 45

tta ggt gct atc cca gga gca ttc gtt gga gca cat ttt gga gta atc 192
Leu Gly Ala Ile Pro Gly Ala Phe Val Gly Ala His Phe Gly Val Ile
50 55 60

ggc gga tct gcc gca tgc att ggt gga tta tta ggt aac ta 233
Gly Gly Ser Ala Ala Cys Ile Gly Gly Leu Leu Gly Asn
65 70 75

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<210> 27 <211> 77 <212> PRT <213> Brochocin-C peptide A; <400> 27

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Met His Lys Val Lys Lys Leu Asn Asn Gln Glu Leu Gln Gln Ile Val
1 5 10 15

Gly Gly Tyr Ser Ser Lys Asp Cys Leu Lys Asp Ile Gly Lys Gly Ile
20 25 30

Gly Ala Gly Thr Val Ala Gly Ala Ala Gly Gly Gly Leu Ala Ala Gly
35 40 45

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Leu Gly Ala Ile Pro Gly Ala Phe Val Gly Ala His Phe Gly Val Ile  
50 55 60

Gly Gly Ser Ala Ala Cys Ile Gly Gly Leu Leu Gly Asn  
65 70 75

<210> 28 <211> 77 <212> PRT <213> Brochocin-C peptide A <400> 28

Met His Lys Val Lys Lys Leu Asn Asn Gln Glu Leu Gln Gln Ile Val  
1 5 10 15

Gly Gly Tyr Ser Ser Lys Asp Cys Leu Lys Asp Ile Gly Lys Gly Ile  
20 25 30

Gly Ala Gly Thr Val Ala Gly Ala Ala Gly Gly Gly Leu Ala Ala Gly  
35 40 45

Leu Gly Ala Ile Pro Gly Ala Phe Val Gly Ala His Phe Gly Val Ile  
50 55 60

Gly Gly Ser Ala Ala Cys Ile Gly Gly Leu Leu Gly Asn  
65 70 75

<210> 29 <211> 182 <212> DNA <213> Brochocin-C peptide B; <220>  
<221> CDS <222> (1)..(180) <223>

<220> <221> sig\_peptide <222> (1)..(51) <223>

<400> 29

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Met Lys Lys Glu Leu Asn Lys Asn Glu Met Ser Arg Ile Ile Gly  
1 5 10 15

ggc aaa ata aat tgg gga aat gtt ggc ggt tct tgt gtt gga ggt gca 96  
Gly Lys Ile Asn Trp Gly Asn Val Gly Gly Ser Cys Val Gly Gly Ala  
20 25 30

gta att gga ggc gcc ctc ggt gga cta ggt gga gct ggc gga ggt tgc 144  
Val Ile Gly Gly Ala Leu Gly Gly Leu Gly Gly Ala Gly Gly Gly Cys  
35 40 45

att aca gga gct atc gga agt att tgg gat caa tgg ta 182  
Ile Thr Gly Ala Ile Gly Ser Ile Trp Asp Gln Trp  
50 55 60

<210> 30 <211> 60 <212> PRT <213> Brochocin-C peptide B; <400> 30

Met Lys Lys Glu Leu Leu Asn Lys Asn Glu Met Ser Arg Ile Ile Gly  
1 5 10 15

Gly Lys Ile Asn Trp Gly Asn Val Gly Gly Ser Cys Val Gly Gly Ala  
20 25 30

Val Ile Gly Gly Ala Leu Gly Gly Leu Gly Gly Ala Gly Gly Gly Cys  
35 40 45

Ile Thr Gly Ala Ile Gly Ser Ile Trp Asp Gln Trp  
50 55 60

<210> 31 <211> 60 <212> PRT <213> Brochocin-C peptide B <400> 31

Met Lys Lys Glu Leu Leu Asn Lys Asn Glu Met Ser Arg Ile Ile Gly  
1 5 10 15

Gly Lys Ile Asn Trp Gly Asn Val Gly Gly Ser Cys Val Gly Gly Ala  
20 25 30

Val Ile Gly Gly Ala Leu Gly Gly Leu Gly Gly Ala Gly Gly Gly Cys  
35 40 45

Ile Thr Gly Ala Ile Gly Ser Ile Trp Asp Gln Trp  
50 55 60

<210> 32 <211> 161 <212> DNA <213> Brochocin-C immunity peptide;  
<220> <221> CDS <222> (1)..(144) <223>

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1 5 10 15  
tgt aac ttt tta ata aaa aaa gat gtg tct tca aaa aaa aaa tta ttt 96  
Cys Asn Phe Leu Ile Lys Lys Asp Val Ser Ser Lys Lys Lys Leu Phe  
20 25 30  
tta aca ggt tct att gct gtc ttt cta att atc tat gat ttt cta tgg 144  
Leu Thr Gly Ser Ile Ala Val Phe Leu Ile Ile Tyr Asp Phe Leu Trp  
35 40 45  
attatatattct ctaacta 161

<210> 33 <211> 48 <212> PRT <213> Brochocin-C immunity peptide;  
<400> 33

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1 5 10 15

Cys Asn Phe Leu Ile Lys Lys Asp Val Ser Ser Lys Lys Lys Leu Phe  
20 25 30

Leu Thr Gly Ser Ile Ala Val Phe Leu Ile Ile Tyr Asp Phe Leu Trp  
35 40 45

<210> 34 <211> 53 <212> PRT <213> Brochocin-C immunity peptide  
<400> 34

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1 5 10 15

Cys Asn Phe Leu Ile Lys Lys Asp Val Ser Ser Lys Lys Lys Leu Phe  
20 25 30

Leu Thr Gly Ser Ile Ala Val Phe Leu Ile Ile Tyr Asp Phe Leu Trp  
35 40 45

Ile Ile Phe Ser Asn  
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<210> 35 <211> 2226 <212> DNA <213> Enterocin 900 operon; <400> 35  
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<210> 36 <211> 215 <212> DNA <213> Enterocin 900 peptide; <220>  
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tgtggtgctg caattgctgg gggattatgt ggaatcccaa aaggaccact agcatgggct 180
gctgggttag caaatgtata ctctaaatgc aacta 215

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<210> 37 <211> 71 <212> PRT <213> Enterocin 900 peptide <400> 37

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Gly Gly Glu Asn Asp His Arg Met Pro Asn Glu Leu Asn Arg Pro Asn
20          25          30

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Asn Leu Ser Lys Gly Gly Ala Lys Cys Gly Ala Ala Ile Ala Gly Gly

35

40

45

Leu Phe Gly Ile Pro Lys Gly Pro Leu Ala Trp Ala Ala Gly Leu Ala  
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Asn Val Tyr Ser Lys Cys Asn  
 65 70

<210> 38 <211> 103 <212> PRT <213> Colicin V pre-peptide; <220>  
 <221> disulfide-bond <222> (91)..(102) <223>

<220> <221> cleavage-site <222> (15)..(16) <223>

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 20 25 30

Val Ala Gly Gly Ile Gly Ala Ala Ala Gly Gly Val Ala Gly Gly Ala  
 35 40 45

Ile Tyr Asp Tyr Ala Ser Thr His Lys Pro Asn Pro Ala Met Ser Pro  
 50 55 60

Ser Gly Leu Gly Gly Thr Ile Lys Gln Lys Pro Glu Gly Ile Pro Ser  
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Glu Ala Trp Asn Tyr Ala Ala Gly Arg Leu Cys Asn Trp Ser Pro Asn  
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Asn Leu Ser Asp Val Cys Leu  
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<210> 39 <211> 88 <212> PRT <213> Colicin V; <220> <221>  
 disulfide-bond <222> (76)..(87) <223>

<400> 39

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 1 5 10 15

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 20 25 30

Ala Ile Tyr Asp Tyr Ala Ser Thr His Lys Pro Asn Pro Ala Met Ser  
 35 40 45

Pro Ser Gly Leu Gly Gly Thr Ile Lys Gln Lys Pro Glu Gly Ile Pro  
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Ser Glu Ala Trp Asn Tyr Ala Ala Gly Arg Leu Cys Asn Trp Ser Pro  
 65 70 75 80

Asn Asn Leu Ser Asp Val Cys Leu  
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<210> 40 <211> 675 <212> DNA <213> carnobacteriocin BM1; <220>  
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<220> <221> RBS <222> (290)..(293) <223>

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 Met Lys Ser Val  
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aaa gaa cta aat aaa aaa gaa atg caa caa att aat ggt gga gct atc 162  
 Lys Glu Leu Asn Lys Lys Glu Met Gln Gln Ile Asn Gly Gly Ala Ile  
 5 10 15 20

tct tat ggc aat ggt gtt tat tgt aac aaa gag aaa tgt tgg gta aac 210  
 Ser Tyr Gly Asn Gly Val Tyr Cys Asn Lys Glu Lys Cys Trp Val Asn  
 25 30 35

aag gca gaa aac aaa caa gct att act gga ata gtt atc ggt gga tgg 258  
 Lys Ala Glu Asn Lys Gln Ala Ile Thr Gly Ile Val Ile Gly Gly Trp  
 40 45 50

gct tct agt tta gca gga atg gga cat taaagaggta tctagtt atg ata 308  
 Ala Ser Ser Leu Ala Gly Met Gly His Met Ile  
 55 60

aaa gat gaa aaa ata aat aaa atc tat gct tta gtt aag agc gca ctt 356  
 Lys Asp Glu Lys Ile Asn Lys Ile Tyr Ala Leu Val Lys Ser Ala Leu  
 65 70 75

gat aat acg gat gtt aag aat gat aaa aaa ctt tct tta ctt ctt atg 404  
 Asp Asn Thr Asp Val Lys Asn Asp Lys Lys Leu Ser Leu Leu Leu Met  
 80 85 90 95

aga ata caa gaa aca tca att aat gga gaa cta ttt tac gat tat aaa 452  
 Arg Ile Gln Glu Thr Ser Ile Asn Gly Glu Leu Phe Tyr Asp Tyr Lys  
 100 105 110

aaa gaa tta cag cca gct att agt atg tac tct att caa cat aac ttt 500  
 Lys Glu Leu Gln Pro Ala Ile Ser Met Tyr Ser Ile Gln His Asn Phe  
 115 120 125

cgg gtt cct gac gat cta gta aaa ctg tta gca tta gtt caa aca cct 548  
 Arg Val Pro Asp Asp Leu Val Lys Leu Leu Ala Leu Val Gln Thr Pro  
 130 135 140

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 Lys Ala Trp Ser Gly Phe  
 145

taaaaataag gaataatggg aaatcagcat tccttatttt tatagtcac acactataac 656  
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<210> 41 <211> 61 <212> PRT <213> carnobacteriocin BM1; <400> 41

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Cys Trp Val Asn Lys Ala Glu Asn Lys Gln Ala Ile Thr Gly Ile Val  
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Ile Gly Gly Trp Ala Ser Ser Leu Ala Gly Met Gly His  
 50 55 60

<210> 42 <211> 88 <212> PRT <213> carnobacteriocin BM1; <400> 42

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 20 25 30

Leu Met Arg Ile Gln Glu Thr Ser Ile Asn Gly Glu Leu Phe Tyr Asp  
 35 40 45

Tyr Lys Lys Glu Leu Gln Pro Ala Ile Ser Met Tyr Ser Ile Gln His  
 50 55 60

Asn Phe Arg Val Pro Asp Asp Leu Val Lys Leu Leu Ala Leu Val Gln  
 65 70 75 80

Thr Pro Lys Ala Trp Ser Gly Phe  
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			20					25					30					
Cys	Trp	Val	Asn	Lys	Ala	Glu	Asn	Lys	Gln	Ala	Ile	Thr	Gly	Ile	Val			
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Ile	Gly	Gly	Trp	Ala	Ser	Ser	Leu	Ala	Gly	Met	Gly	His						
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agatatgata tagttttttt gaaatacaaaa tataaaataa aggagtttga tttag atg Met 1	238
aat agc gta aaa gaa tta aac gtg aaa gaa atg aaa caa tta cac ggt Asn Ser Val Lys Glu Leu Asn Val Lys Glu Met Lys Gln Leu His Gly 5 10 15	286
gga gta aat tat ggt aat ggt gtt tct tgc agt aaa aca aaa tgt tca Gly Val Asn Tyr Gly Asn Gly Val Ser Cys Ser Lys Thr Lys Cys Ser 20 25 30	334
gtt aac tgg gga caa gcc ttt caa gaa aga tac aca gct gga att aac Val Asn Trp Gly Gln Ala Phe Gln Glu Arg Tyr Thr Ala Gly Ile Asn 35 40 45	382
tca ttt gta agt gga gtc gct tct ggg gca gga tcc att ggt agg aga Ser Phe Val Ser Gly Val Ala Ser Gly Ala Gly Ser Ile Gly Arg Arg 50 55 60 65	430
ccg taaatatata aatacaatat agagcaagggt ggtgataca atg gat ata aag Pro Met Asp Ile Lys 70	484
tct caa aca tta tat ttg aat cta agc gag gca tat aaa gac cct gaa Ser Gln Thr Leu Tyr Leu Asn Leu Ser Glu Ala Tyr Lys Asp Pro Glu 75 80 85	532
gta aaa gct aat gaa ttc tta tca aaa tta gtt gta caa tgt gct ggg Val Lys Ala Asn Glu Phe Leu Ser Lys Leu Val Val Gln Cys Ala Gly 90 95 100	580
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205 210 215 220

cgt atg aac ata gat atc tct aca gca atc aga aaa gat ggt gtt act 1201  
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225 230 235

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240 245 250

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Tyr Ile Lys Tyr Gly Tyr  
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Asn Ser Phe Val Ser Gly Val Ala Ser Gly Ala Gly Ser Ile Gly Arg  
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Arg Pro  
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Lys Asp Pro Glu Val Lys Ala Asn Glu Phe Leu Ser Lys Leu Val Val  
20 25 30

Gln Cys Ala Gly Lys Leu Thr Ala Ser Asn Ser Glu Asn Ser Tyr Ile  
35 40 45

Glu Val Ile Ser Leu Leu Ser Arg Gly Ile Ser Ser Tyr Tyr Leu Ser  
50 55 60

His Lys Arg Ile Ile Pro Ser Ser Met Leu Thr Ile Tyr Thr Gln Ile  
65 70 75 80

Gln Lys Asp Ile Lys Asn Gly Asn Ile Asp Thr Glu Lys Leu Arg Lys  
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Tyr Glu Ile Ala Lys Gly Leu Met Ser Val Pro Tyr Ile Tyr Phe  
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Asn Glu Ser Leu Gln Asn Val Leu Glu Asn Tyr Leu Glu Glu Leu Glu  
20 25 30

Gln Ala Asn Ala Ala Val Pro Ile Ile Leu Gly Arg Met Asn Ile Asp  
35 40 45

Ile Ser Thr Ala Ile Arg Lys Asp Gly Val Thr Leu Ser Glu Ile Gln  
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Ser Lys Lys Leu Lys Glu Leu Ile Ser Ile Ser Tyr Ile Lys Tyr Gly  
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Tyr

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Ser Val Asn Trp Gly Gln Ala Phe Gln Glu Arg Tyr Thr Ala Gly Ile  
35 40 45

Asn Ser Phe Val Ser Gly Val Ala Ser Gly Ala Gly Ser Ile Gly Arg  
50 55 60

Arg Pro  
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20 25 30

Gln Cys Ala Gly Lys Leu Thr Ala Ser Asn Ser Glu Asn Ser Tyr Ile  
35 40 45

Glu Val Ile Ser Leu Leu Ser Arg Gly Ile Ser Ser Tyr Tyr Leu Ser  
50 55 60

His Lys Arg Ile Ile Pro Ser Ser Met Leu Thr Ile Tyr Thr Gln Ile  
65 70 75 80

Gln Lys Asp Ile Lys Asn Gly Asn Ile Asp Thr Glu Lys Leu Arg Lys  
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Asn Glu Ser Leu Gln Asn Val Leu Glu Asn Tyr Leu Glu Glu Leu Glu  
 20 25 30

Gln Ala Asn Ala Ala Val Pro Ile Ile Leu Gly Arg Met Asn Ile Asp  
 35 40 45

Ile Ser Thr Ala Ile Arg Lys Asp Gly Val Thr Leu Ser Glu Ile Gln  
 50 55 60

Ser Lys Lys Leu Lys Glu Leu Ile Ser Ile Ser Tyr Ile Lys Tyr Gly  
 65 70 75 80

Tyr

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